What Works Clearinghouse

ies INSTITUTE OF EDUCATION SCIENCES

Beginning Reading August 13, 2007

Voyager Universal Literacy System®

Program description[1]

The *Voyager Universal Literacy System*® is a core reading program designed to help students learn to read at or above grade level by the end of the third grade. This program uses strategies such as individual reading instruction, higher-level comprehension activities, problem solving, and writing. Students are also exposed to computer-based practice and reinforcement in phonological skills, comprehension, fluency, language development, and writing. The program uses whole classroom, small group, and independent group settings. *Voyager Universal Literacy System*® emphasizes regular assessments, with biweekly reviews for struggling students and quarterly assessments for all students.

Research

Two studies of *Voyager Universal Literacy System*® met WWC evidence standards with reservations. The two studies included over 600 kindergarten students from Florida, Ohio, and Washington, DC.[2] The WWC considers the extent of evidence for *Voyager Universal Literacy System*® to be moderate to large for alphabetics and small for comprehension. No studies that met WWC evidence standards with or without reservations addressed fluency or general reading achievement.

Effectiveness

Voyager Universal Literacy System® was found to have potentially positive effects on alphabetics and potentially negative effects on comprehension.

	Alphabetics	*Fluency*	*Comprehension*	*General reading achievement*
Rating of effectiveness	Potentially positive	na	Potentially negative	na
Improvement index[3]	Average: +11 percentile points Range: –8 to +27 percentile points	na	Average: –25 percentile points	na

na = not applicable

1. The descriptive information for this program was obtained from publicly available sources: the program's website (www.voyagerlearning.com; downloaded April 2007) and the research literature (Frechtling, Zhang, & Silverstein, 2006). The WWC requests developers to review the program description sections for accuracy from their perspective. Further verification of the accuracy of the descriptive information for this program is beyond the scope of this review.
2. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.
3. These numbers show the average and range of student-level improvement indices for all findings across the studies.

Additional program information[1]

Developer and contact

Voyager Universal Literacy System® was developed by Sharon Vaughn, Ed Kame'ennui, Deborah Simmons, Roland Good, and Jeri Nowakowski. *Voyager Universal Literacy System*® is a program of *Voyager Expanded Learning* and is owned and distributed by Pro Quest Education. Address: Voyager Expanded Learning, One Hickory Centre, 1800 Valley View Suite 400, Dallas, TX 75234-8923. Web: www.voyagerlearning.com. Telephone: (888) 399-1995.

Scope of use

The program was first published in 2000. According to the developer, *Voyager Universal Literacy System*® has been implemented with students reading at all levels, including students who receive special education services. Since 2002, *Voyager Universal Literacy System*® has been used in 360 districts in 22 states across the US. Almost 17, 500 teachers and over 331,000 students have used the program.

Teaching

Sequenced lessons provide the teachers with tools and directions for instruction and assessment. Classroom activities include read-alouds directed by the teacher and students reading at different levels in whole group, small group, and independent settings. The program also involves computer-based practice in phonological skills, comprehension, fluency, writing, and language development. *Voyager Universal Literacy System*® involves use of a progress monitoring system four times a year to determine if any students are struggling. Struggling readers are provided with 10–20 minutes of supplemental in-school instruction and, if they continue to struggle, have the option of enrolling in an 80-hour summer reading intervention program. The program has a home study curriculum with 15-minute activities to use with parents. In addition, each child receives a take-home library to initiate the child's own book collection. The *Voyager Universal Literacy System*® program utilizes ongoing professional development and school-based reading coaches.

Cost

The cost for *Voyager Universal Literacy System*® is $244 per student for the first year and $160 for subsequent years. This includes curriculum materials—student books, home study guides, and assessment record sheets for each grade level, as well as daily lesson plans and teacher training materials, teacher's guides for reading intervention and enrichment activities, a classroom management packet, a literature library, and a teacher supply pack with manipulatives, CDs, puppets, games, and additional materials. Other elements of the program include a progress monitoring system with an online data management system, a *Struggling Reader Intervention*, and summer *Advanced Reader Modules* programs. The cost also includes initial teacher and reading coach training, done on-site. Costs can vary based on which elements are selected. Further training kits (using videos and tutorials) are also available.

Research

Seven studies reviewed by the WWC investigated the effects of the *Voyager Universal Literacy System*®. Two studies (Frechtling, Zhang, & Silverstein, 2006; Hecht, 2003) were quasi-experimental designs that met WWC evidence standards with reservations. The remaining five studies did not meet WWC evidence screens.

Frechtling, Zhang, & Silverstein (2006) included 447 kindergarten students in eight schools. Students in the intervention schools used *Voyager Universal Literacy System*® for two hours a day and students in the comparison schools used only their schools' existing curriculum. In the final analysis sample 202 intervention students were compared with 196 comparison students. The two groups scored similarly on achievement pretests after attrition.

Research *(continued)*

Hecht (2003) included 213 students in four low-income schools.[4] Students in the intervention schools used *Voyager Universal Literacy System*® as their daily reading program. Students in the comparison schools used their schools' existing curriculum. The two groups scored similarly on achievement pretests after attrition.

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or moderate to large (see the What Works Clearinghouse Extent of Evidence Categorization Scheme). The extent of evidence takes into account the number of studies and the total sample size across the studies that met WWC evidence standards with or without reservations.[5]

The WWC considers the extent of evidence for *Voyager Universal Literacy System*® to be moderate to large for alphabetics and small for comprehension. No studies that met WWC evidence standards with or without reservations addressed fluency or general reading achievement.

Effectiveness

Findings

The WWC review of interventions for beginning reading addresses student outcomes in four domains: alphabetics, fluency, comprehension, and general reading achievement.[6] The studies included here cover outcomes in alphabetics and comprehension. Within alphabetics, results for four constructs are reported: phonological awareness, print awareness, letter knowledge, and phonics. The findings below present the authors' estimates and WWC-calculated estimates of the size and statistical significance of the effects of *Voyager Universal Literacy System*® on students.[7]

Alphabetics

Phonological awareness. Frechtling, Zhang, and Silverstein (2006) reported positive, but not statistically significant, effects on the four phonological awareness measures (Comprehensive Test of Phonological Processing (CTOPP) Elision, Blending Words, Blending Nonwords, and Segmentation subtests).

Hecht (2003) examined effects for three phonological awareness measures (Blending, CTOPP Elision, and CTOPP Segmentation) and found a positive and statistically significant effect on the CTOPP Segmentation subtest. None of these effects were statistically significant according to the WWC analysis.

Letter Knowledge. Frechtling, Zhang, and Silverstein (2006) found a positive, but not statistically significant effect on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Letter Naming Fluency subtest.

Hecht (2003) reported a positive and statistically significant effect on using a researcher-designed measure of letter naming

4. The study originally included 429 students and was designed to examine outcomes for intervention and comparison students within and between schools. However, data on the within-school comparisons was not reported in the study due to what the study authors called poor implementation of the intervention at the schools used for the within-school comparisons. The WWC typically considers the success of implementation of the intervention to be part of the effect of the intervention and reports on study findings regardless of implementation. However, data for the within-schools comparisons were not presented and the WWC cannot report on the effectiveness of the intervention for this portion of the study.
5. The Extent of Evidence categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept, external validity, such as the students' demographics and the types of settings in which studies took place, are not taken into account for the categorization.
6. For definitions of the domains, see the Beginning Reading Protocol.
7. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the WWC Tutorial on Mismatch. See Technical Details of WWC-Conducted Computations for the formulas the WWC used to calculate statistical significance. In the case of all studies of the *Voyager Universal Literacy System*®, corrections for clustering and multiple comparisons were needed, so the significance levels differ from those reported in the original studies.

Effectiveness *(continued)*

fluency. According to WWC calculations, the effect was not statistically significant.

Print Awareness. Hecht (2003) reported a negative, but not statistically significant, effect on the Concepts about Print subtest.

Phonics. Frechtling, Zhang, & Silverstein (2006) reported positive, but not statistically significant, effects for the two Woodcock Reading Mastery (WRMT) subtests: Word Identification and Word Attack.

Hecht (2003) reported a statistically significant positive effect for the Letter Sounds test. However, this outcome was not statistically significant according to the WWC analysis. The study found negative effects on the DIBELS Nonsense Word Fluency and Woodcock Word Identification subtests and a positive effect on the Woodcock Reading Mastery Test-Revised (WRMT-R) Word Attack subtest, but none of the effects were statistically significant.

Across all constructs in the alphabetics domain, the average effect size in Frechtling, Zhang, & Silverstein (2006) was positive and large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25). The average effect size for Hecht (2003) was positive, but not large enough to be considered substantively important.

Comprehension

Hecht (2003) reported a negative and statistically significant effect on the Stanford-Binet Intelligence Expressive Vocabulary subtest. This outcome was not statistically significant according to the WWC analysis but the effect size was large enough to be substantively important (that is, smaller than –0.25).

Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research design, the statistical significance of the findings,[8] the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Intervention Rating Scheme).

The WWC found *Voyager Universal Literacy System®* to have potentially positive effects on alphabetics and potentially negative effects on comprehension

Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study and an average improvement index across studies (see Technical Details of WWC-Conducted Computations). The improvement index represents the difference between the percentile rank of the average student in the intervention condition versus the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is based entirely on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analyses. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.

The average improvement index for alphabetics is +11 percentile points across the two studies, with a range of –8 to +27 percentile points across findings. The improvement index for comprehension is –25 for the one outcome studied.

Summary

The WWC reviewed seven studies on *Voyager Universal Literacy System®*. Two of these studies met WWC evidence standards with reservations; the remaining studies did not meet WWC evidence screens. Based on these two studies, the WWC found potentially positive effects on alphabetics and potentially negative effects on comprehension. Evidence presented in this report may change as new research emerges.

8. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the WWC Tutorial on Mismatch. See the Technical Details of WWC-Conducted Computations for the formulas the WWC used to calculate the statistical significance. In the case of *Voyager Universal Literacy System®,* corrections for clustering and multiple comparisons were needed.

References

Met WWC evidence standards with reservations

Frechtling, J. A., Zhang, X., Silverstein, G. (2006). The Voyager Universal Literacy System: Results from a study of kindergarten students in inner-city schools. *Journal of Education for Students Placed At-Risk*, *11*(1), 75–95.

Additional sources:

Frechtling, J., Silverstein, G., & Zhang, X. (2003). *Evaluation of the Voyager Universal Literacy System*. Retrieved from Voyager Expanded Learning© Web site: http://www.voyagerlearning.com/docs/difference/report_studies/Westat.pdf

Frechtling, J., Zhang, X., & Wang, L. W. (2004). *Evaluation of the Voyager Universal Literacy System: Year 2*. Retrieved from Voyager Expanded Learning© Web site: http://www.voyagerlearning.com/docs/difference/report_studies/WESTAT_Voyager_2004_3.pdf

Hecht, S. A. (2003). *A study between Voyager and control schools in Orange County, Florida 2002–2003*. Retrieved from Voyager Expanded Learning© Web site: http://www.voyagerlearning.com/docs/difference/report_studies/ocps_2002_03.pdf

Did not meet WWC evidence screens

Hecht, S. A., & Torgesen, J. K. (2002). *Within school treatment and control study: Voyager Universal Literacy System: Orange County, Florida 2001–2002*. Retrieved from Voyager Expanded Learning© Web site: http://www.voyagerlearning.com/ResearchStudyDocuments/OrangeCounty_FL_Treatment_Control_Study_2001-2002.pdf[9]

Roberts, G. (2002, June). *Evaluation report on the impact of the Voyager Universal Literacy System in Birmingham City Schools.* Retrieved April 19, 2007, from http://www.voyagerlearning.com/docs/difference/report_studies/Birmingham.pdf[10]

Roberts, G. (2003). *Longitudinal study of the effect of universal literacy: A hierarchical linear modeling analysis of curriculum-based measurement data.* Austin, TX: Evaluation Research Services.[10]

Roberts, G., & Allen, A. S. (2003). *Impact of the Voyager Universal Literacy System as measured by PALS in Virginia*. Retrieved from Voyager Expanded Learning© Web site: http://www.voyagerlearning.com/ResearchStudyDocuments/ULS_measuredby_PALS_Richmond_VA.pdf[11]

Starnes, D., Taylor, D., & Betourne, M. (2004). *Voyager Universal Literacy System second year evaluation report: Fulton County Schools.* Atlanta, GA: EMSTAR Research, Inc.[12]

For more information about specific studies and WWC calculations, please see the WWC *Voyager Universal Literacy System*® Technical Appendices.

9. Incomparable groups: this study was a quasi-experimental design with substantial differences in student and teacher characteristics prior to the start of the intervention.
10. Does not use a strong causal design: this study did not use a comparison group.
11. Incomparable groups: this study was a quasi-experimental design that used achievement pretests, but it did not establish that the comparison group was comparable to the treatment group prior to the start of the intervention.
12. This study was a quasi-experimental design but did not use achievement pretests to establish that the comparison group was equivalent to the intervention group at baseline.